CLAIMS

What is claimed is:

1. A method for reducing corrosion of a head element during rework operations, said head element being initially contained within the housing of an assembled disk drive, said method comprising the steps of:

opening said housing of said disk drive;

removing said head element from said housing of said disk drive; and

applying a protective coating to said head element.

2. The method, as claimed in Claim 1, further comprising the step of cleaning said head element prior to said step of applying a protective coating.

3. The method, as claimed in Claim 1, wherein said protective coating is applied in a vacuum chamber.

4. The method, as claimed in Claim 1, wherein said protective coating is applied utilizing solvent-mediated deposition.

5. The method, as claimed in Claim 1, wherein said protective coating is applied utilizing vapor-mediated deposition.

6. The method, as claimed in Claim 1, wherein said step of applying a protective coating is performed by depositing precursor molecules in the vapor phase.

7. The method, as claimed in Claim 1, wherein said protective coating comprises a fluorocarbon polymer.

8. The method, as claimed in Claim 1, wherein said protective coating is a thickness of greater than 50.

9. The method, as claimed in Claim 1, further comprising the step of storing said head element following said step of applying said protective coating.

10. The method, as claimed in Claim 1, further comprising the step of post-processing said protective coating to enhance its corrosion protection.

11. The method, as claimed in Claim 1, further comprising the step of reworking at least one component of said disk drive.

12. The method, as claimed in Claim 10, further comprising the step of removing at least a portion of said protective coating after said step of reworking said disk drive.

13. The method, as claimed in Claim 12, further comprising the step of reassembling said disk drive after said step of removing at least a portion of said protective coating.

14. The method, as claimed in Claim 11, further comprising the step of removing at least a portion of said protective coating from said head element after said step of reworking said disk drive.

15. The method, as claimed in Claim 14, further comprising the step of reassembling said disk drive after said step of removing at least a portion of said protective coating from said head element.

16. The method, as claimed in Claim 11, further comprising the step of removing at least a portion of said protective coating completely exposing said head element after said step of reworking said disk drive.

17. The method, as claimed in Claim 16, further comprising the step of reassembling said disk drive after said step of removing at least a portion of said protective coating completely exposing said head element.

18. The method, as claimed in Claim 13, further comprising the step of testing said disk drive after said step of reassembling said disk drive.

19. The method, as claimed in Claim 11, further comprising the combination step of simultaneously cleaning said head element while removing said protective coating, after said step of reworking said disk drive.

20. The method, as claimed in Claim 12, wherein said step of removing at least a portion of said protective coating is performed utilizing a solvent.

21. The method, as claimed in Claim 19, wherein said step of simultaneously cleaning said head element while removing said protective coating, is performed using a non-aqueous solvent.

22. The method, as claimed in Claim 10, wherein said post-processing step is performed by exposing said protective coating to a form of energy selected from the group consisting of infrared, ultraviolet, plasma, or radiant heat.

23. The method, as claimed in Claim 11, further comprising the step of reassembling the disk drive followed by the step of removing at least a portion of said protective coating.

24. The method, as claimed in Claim 23, further comprising the step of testing said disk drive.

25. The method, as claimed in Claim 13, further comprising the step of removing at least an additional portion of said protective coating after said step of reassembling the disk drive.

26. The method, as claimed in Claim 25, further comprising the step of testing said disk drive.

27. The method, as claimed in Claim 15, further comprising the step of removing at least an additional portion of said protective coating from said head element after said step of reassembling said disk drive.

28. The method, as claimed in Claim 27, further comprising the step of testing said disk drive.

29. The method, as claimed in Claim 1, wherein said protective coating thickness comprises at least one monolayer.

30. The method, as claimed in Claim 1, wherein said protective coating thickness comprises at least 50 angstroms.

31. The method, as claimed in Claim 1, wherein said protective coating is applied having a thickness up to approximately 250 angstroms.

32. In a disk drive having at least one head element, said disk drive having been opened after initial assembly for purposes of reworking, and the head element having been removed, the improvement comprising:

a protective coating applied to said head element to reduce corrosive effects from the surrounding atmosphere.

33. The improvement, as claimed in Claim 32, wherein said protective coating is applied in a vacuum chamber.

34. The improvement, as claimed in Claim 32, wherein said protective coating is applied utilizing a solvent-mediated deposition process.

35. The improvement, as claimed in Claim 32, wherein said protective coating is applied utilizing a vapor-mediated deposition process.

36. The improvement, as claimed in Claim 32, wherein said protective coating comprises a fluorocarbon polymer.

37. The improvement, as claimed in Claim 32, wherein said protective coating is a thickness of greater than 50.

38. The improvement, as claimed in Claim 32, wherein said protective coating is applied by depositing precursor molecules in the vapor phase.

39. The improvement, as claimed in Claim 32, wherein said protective coating is exposed to an energy source selected from the group consisting of infrared, ultraviolet, plasma, or radiant heat.

40 The method, as claimed in Claim 32, wherein said protective coating thickness comprises at least one monolayer.

41. The method, as claimed in Claim 32, wherein said protective coating thickness comprises at least 50 angstroms.

42. The method, as claimed in Claim 32, wherein said protective coating is applied having a thickness up to approximately 250 angstroms.

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Steve Gerrity
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43. A method for shipping a head element removed from a disk drive, said method comprising the steps of:

removing said head element from said disk drive;

applying a protective coating to said head element;

placing said head element into a container; and,

transporting said container.

44. The method, as claimed in Claim 43, further comprising the step of cleaning said head element prior to said step of applying a protective coating.

45. The method, as claimed in Claim 43, further comprising the step of mounting said head element to a shipping comb.

46. The method, as claimed in Claim 45, wherein said step of applying a protective coating to said head element occurs following mounting said element to said shipping comb.

47. A method for storing a head element removed from a disk drive, said method comprising the steps of:

removing said head element from said disk drive;

applying a protective coating to said head element; and,

placing said head element in a storage container.

48. The method, as claimed in Claim 47, further comprising the step of cleaning said head element prior to said step of applying a protective coating.

49. The method, as claimed in Claim 47, further comprising the step of mounting said head element to a shipping comb.

50. The method, as claimed in Claim 49, wherein said step of applying a protective coating to said head element occurs following mounting said head element to said shipping comb.

51. In subcombination, from a disk drive that is disassembled and at least partially reworked, the subcombination comprising:

a head element for transferring data to and from said disk;

a protective coating on said head element applied after disassembly.

52. The subcombination, as claimed in Claim 51, further comprising a shipping comb, wherein said head element is mounted on said shipping comb.

53. The subcombination, as claimed in Claim 51, wherein said protective coating comprises polymeric fluorocarbon.

54. The subcombination, as claimed in Claim 51, wherein said protective coating is applied utilizing a solvent-mediated deposition process.

55. The subcombination, as claimed in Claim 51, wherein said protective coating is applied utilizing a vapor-mediated deposition process.

56. The subcombination, as claimed in Claim 51, wherein said protective coating is applied by depositing precursor molecules in the vapor phase.

57. The subcombination, as claimed in Claim 51, wherein said protective coating is a thickness of greater than 50 angstroms.

58. The subcombination, as claimed in Claim 57, wherein said protective coating is exposed to a solvent.

59. The subcombination, as claimed in Claim 54, wherein said protective coating is post-processed to enhance its corrosion protection.

60. The subcombination, as claimed in Claim 59, wherein said protective coating is exposed to an energy source selected from the group consisting of infrared, ultraviolet, plasma, or radiant heat.

61. The method, as claimed in Claim 51, wherein said protective coating thickness comprises at least one monolayer.

62. The method, as claimed in Claim 51, wherein said protective coating thickness comprises at least 50 angstroms.

63. The method, as claimed in Claim 51, wherein said protective coating is applied having a thickness up to approximately 250 angstroms.